

**MARY DOHERTY**  
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#### **PROFESSIONAL PREPARATION**

**Postdoctoral: University of Maryland Center for Environmental Sciences**

Advisor: Byron Crump 2010-present

**Postdoctoral: University of Georgia Marine Institute**

Advisor: Melissa Booth 2008-2010

**Graduate: University of Massachusetts**

Ph.D. Organismic and Evolutionary Biology 2009

**Graduate: Smith College**

M.A. Biological Sciences 2005

**Graduate: University of Massachusetts**

M. Ed. Education 1998

**Undergraduate: Smith College**

B.A. Biological Sciences 1990

#### **AWARDS AND HONORS**

- 2007-08 **University of Massachusetts Graduate School Joseph L. Boscov Scholarship**  
Full academic year tuition waiver and stipend.
- 2006 **U.S. Department of Energy**  
Travel award of \$500 to attend Gordon Research Conference on Marine Microbes.
- 2005 **Margaret Walsh Grantham Research Fellowship**  
Smith College. Awarded \$3,600 for summer research.
- 2004 **Esther Carpenter Biology Prize**  
Smith College. Financial award to 1st year woman Biology graduate student.
- 1993 **University of Massachusetts Woods Hole Scholarship**  
University of Massachusetts Plant Biology Program. Award for summer research at Friday Harbor Marine Laboratories.

#### **TEACHING EXPERIENCE**

**University of Maryland Center for Environmental Sciences**

Lecturer in Zooplankton Ecology and Aquatic Microbial Ecology 2011-2012

**Smith College**

T.A., Introductory Biology, Spring 2004, Spring 2005, T.A. Microbial Eukaryotes Fall 2003, Fall 2004

**Sharon High School**

Biology Teacher, 2001-2003

**William J. Dean Technical High School**

Biology and Integrated Science Teacher 1998-2003

**University of Massachusetts-Amherst**

T.A., Introductory Plant Biology, Fall 1992, Spring 1992, Fall 1993

**PROFESSIONAL SOCIETY MEMBERSHIPS**

**American Society of Microbiology**

**American Society of Limnology and Oceanography**

**Coastal and Estuarine Research Federation**

**International Society for Microbial Ecology**

**International Society of Protistologists: North American Section**  
Steering Committee

**Sigma Xi Scientific Research Society** Smith College Chapter

**PRESENTATIONS**

- 2012 **International Society for Microbial Ecology (ISME) 14th International Symposium on Microbial Ecology** Poster: Microbial engineers in the Chesapeake Bay Estuary: Dynamically shifting communities with changing metabolic capacities
- 2011 **American Society of Limnology and Oceanography (ASLO) Aquatic Sciences Meeting, San Juan, PR** Talk: Succession of metabolically active microbial communities in seasonally anoxic waters of the Chesapeake Bay assessed with pyrotag sequencing
- 2010 **International Society for Microbial Ecology (ISME) 13th International Symposium, Seattle, WA** Poster: Pyrotag sequencing of microbial communities in a subtropical shallow estuary near Sapelo Island, GA
- 2010 **International Society for Microbial Ecology (ISME) 13th International Symposium, Seattle, WA** Poster presented by Melissa Booth: Expression of unique carbon and sulfur metabolism genes identified through transcriptomic analysis of estuarine bacterial communities of Sapelo Island, GA USA
- 2009 **Coastal and Estuarine Research Federation (CERF) Conference, Portland, OR** Talk: Tracking metabolism of an important terrestrial carbon source by marine bacterioplankton
- 2008 **Gordon Conference on Marine Microbes, Lucca, Italy** Talk presented by Laura Katz: Phylogeography of coastal ciliates: estimates of biodiversity and effective population sizes
- 2008 **Society of Molecular Biology and Evolution (SMBE), Barcelona** Talk presented by Laura Katz: Phylogeography of coastal ciliates: estimates of biodiversity and effective population size
- 2008 **Society for the study of Evolution Annual Meeting, Minneapolis, MN** Poster: Application of Molecular Tools Toward Understanding Patterns and Driving Forces in Marine Ciliate Assemblages
- 2007 **The Center for Biodiversity and Conservation's Twelfth Annual Symposium at the American Museum of Natural History Small Matters: Microbes and Their Role in Conservation** Poster: Assessing diversity of ciliates in marine coastal waters.

- 2006 **New England Molecular Evolutionary Biologists (NEMEB) 17<sup>th</sup> Annual Meeting** Talk: Ciliate diversity in marine sediments: a potential seed bank for the water column.
- 2006 **International Society for Evolutionary Protistology (ISOP)** Talk presented by Laura Katz: Disentangling the complexities of coastal ciliate biogeography
- 2006 **Gordon Research Conference on Marine Microbes** Poster presentation: Molecular Data Reveal Distinct Diversity 'Footprint' in Coastal Ciliates
- 2005 **New England Molecular Evolutionary Biologists (NEMEB) 16<sup>th</sup> Annual Meeting** Talk: Culture-independent Analyses of Coastal Ciliates in the North Atlantic
- 2004 **New England Molecular Evolutionary Biologists (NEMEB) 15<sup>th</sup> Annual Meeting** Poster presentation: Molecular Markers for Assessing diversity of Coastal Ciliates.
- 2004 **Society for Molecular Biology and Evolution (SMBE)** Poster presentation: Molecular Markers for Assessing Community Diversity of Coastal Ciliates
- 2004 **Society of Protozoologists 56<sup>th</sup> Annual Meeting.** Talk: Multiple Molecular Markers for Assessing Community Diversity of Coastal Ciliates.

## PUBLICATIONS

- 2010 **Doherty, M.**, Tamura, M., Vriezen, J.A.C., McManus, G.B., and Katz, L.A. Diversity of Oligotrichia and Choreotrichia Ciliates in Coastal Marine Sediments and in Overlying Plankton *Applied and Environmental Microbiology* 76:3924-3935.
- 2010 **Doherty M.**, Tamura, M., Costas, B.A., Ritchie, M.E., McManus, G.B., and Katz, L.A. Ciliate diversity and distribution across an environmental and depth gradient in Long Island Sound, USA *Environmental Microbiology* 12:886-898.
- 2007 **Doherty, M.**, Costas, B. McManus, G, and Katz, L.A. Culture-independent assessment of planktonic ciliate diversity in coastal Northwest Atlantic waters. *Aquatic Microbial Ecology* 48:141-154.
- 2007 Costas, B. McManus, G, **Doherty, M.**, and Katz, L.A. Use of species-specific primers and PCR to measure the distributions of planktonic ciliates in coastal waters. *Limnology and Oceanography: Methods* 5:163-173.

## FIELD EXPERIENCE

### Cruises

- 2011 **R/V Sharp** (July 5-12 2011) **Chief Scientist.** Planned and organized research cruise of 12 scientists. Collected water and sediment for DNA and RNA analysis, metagenomics and transcriptomics, and quantified anaerobic bacterial production in situ. Supervised, trained and mentored

six graduate and undergraduate students in field research methods along with two K-12 teachers, providing them with hands-on experience in research.

- 2010 **R/V Sharp** (July 8-16 2010) Collected water and sediment for DNA and RNA community analysis, quantified anaerobic bacterial production in situ. Supervised undergraduate REU student in laboratory and field methods.

*Other Field Experience*

- 2010-2011 **University of Maryland Center for Environmental Sciences** Organized and participated in fourteen day-cruises in the Chesapeake Bay collecting water and sediments for DNA and RNA community analysis, metagenomics and transcriptomics, anaerobic bacterial production, and microscopic counts of protists and bacteria.
- 2008-2010 **University of Georgia Marine Institute** Participated in monthly research cruises along with the Georgia Coastal Long Term Ecological Research program. Collected water samples for DNA and RNA community analysis, gene expression studies, and mesocosm experiments and helped with various measurements of environmental parameters. Collected mud samples for identification and molecular analysis of Foraminifera.
- 2003-2008 **Smith College/University of Massachusetts** Collected water and sediment samples for DNA analysis of ciliate communities in sites from coastal Maine to Long Island Sound.

**OUTREACH ACTIVITIES**

- 2011 **University of Maryland Center for Environmental Sciences at Horn Point** Open House: Designed interactive display and hands-on activities for a broad public audience on how anoxia develops in the Chesapeake Bay every summer. Presentation highlighted diversity of living microbial organisms that thrive in this so-called 'dead zone', as well as the design and development of research tools to help discover them.
- 2011 **COSEE Coastal Trends** K-12 Educator professional development: Mentored two high school teachers on eight day research cruise of Chesapeake Bay. Trained the teachers in research methods, experimental design, and scientific background of the research. Assisted in formulating ideas for lesson plans on microbial ecology, genomics, and research in 'dead zones'.
- 2011 **Horn Point Laboratory Environmental Science Education Center** Talbot County Public Schools Environmental Program (8th grade): Gave presentations to Talbot County eighth graders on microbial ecology,

microbial diversity and research methods for studying microbes.  
Presentation was followed by hands-on laboratory and field activities.

2008-2010 **Hog Hammock Public Library, Sapelo Island Georgia** Volunteer Librarian: Maintained library and provided patron services. Organized educational and outreach programs for local community residents and visitors about the natural history, ecology, culture, and scientific research activities on Sapelo Island.

2003-2008 **Northampton Massachusetts Public Schools** Bridge Street Elementary School and Jackson Street School: Conducted presentations and hands-on activities demonstrating ecological research to second grade classes at Bridge Street School. Provided demonstrations and hands-on experience in a research lab for Jackson Street School students on field trip to Smith College Biological Sciences Department.